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CONNECTION OF INTEMPERANCE WITH DISEASE AND MORTALITY.

[Read before the Norfolk District of the Massachusetts Medical Society, January 10th, 1866, and communicated for the Boston Medical and Surgical Journal.]

By EDWARD JARVIS, M.D., of Dorchester, Mass.

LOOKING at the human organization, it is a matter of interest to learn its susceptibilities and the effect of various external and internal agencies on its structure, on its operations, on its functions and its permanence of life.

It is very apparent that it has definite powers, and that these are given for, or may be applied to, definite purposes; and under certain conditions it can effect those purposes the most completely, it can maintain itself with the greatest energy and success, it can resist deteriorating or disturbing influences—the causes or attacks of disease—the most effectually, and continue its operation to the longest duration.

Any variation from these conditions—anything which interferes with the perfectness of the organization in the free performance of the organic functions—lessens the vital force, the sum total of human energy, the power to sustain the frame in its operations, to defend itself from the dangers that surround it and ward off the attacks of disease or recover from them, when they fix themselves on the human body.

It is plain that the organs were appointed to operate regularly. The internal organization was designed and arranged to support the external frame and supply it with force for action of the brain and the muscles.

The digestive system is simply appointed to prepare new material of blood, and of flesh to take the place of the old particles of flesh as fast as these are worn out or lose their vitality.

This digestive apparatus has a limited purpose and power. In order to do its work the most effectually and give the frame the most force and its highest capacity of mental and physical labor, it must have food exactly adapted to it—neither too much nor too little, neither too stimulating nor too oppressive.

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Any variation from these conditions, however slight, detracts from the perfectness and energy of the vital actions, and the available force, and, if increased sufficiently, it produces derangement and ultimately recognizable disease.

Anything received into the stomach which is not food, which is not fitted to become, and capable of being converted into, flesh, or of sustaining respiration, that does not contribute to the ultimate production and maintenance of vital force, lays a tax on the energy and power of the stomach which is not repaid by the increased capacity of action.

All faithful use of the stomach and due preparation of food yields a definite amount of force which may be expended in the ordinary labors of life. This force may be expended daily and hourly within the limits appointed or measure given, and yet the organs and their functions—the capital of life, or what is usually called the constitution—remain in a condition unimpaired, and the health will be sustained and life protracted. Anything which violates this condition, which quickens the vital actions without producing a corresponding basis of strength, which increases the expenditure of force without increasing the vital capital out of which this force springs, makes a draft on that capital, and, to that extent, vitiates or wastes the constitution.

The introduction of alcohol into the system violates both of these conditions. It lays an undue tax on the digestive organs and it quickens the vital operations. It stimulates the brain and the nervous system to an unnatural and unhealthy energy of action, which, being greater than can be permanently sustained, leaves the system correspondingly exhausted. It momentarily places a greater available force in the muscular system, and one can, for the time, labor more under this influence than otherwise; but this is not the permanent increase of force. All excess is but a draft on the constitutional force that lays behind. Of all these excitements, each in its degree disturbs the permanent and healthy functions and wastes the healthy powers, so that they afterwards operate with less certainty and less regularity.

The whole animal system, then, with its internal machinery acting with a diminished precision, with less energy to prepare the material of life and convert this into living flesh, is less able to sustain a vigorous constitutional force, less capable of accomplishing the average labors of man and of resisting the influence of destructive external agencies.

The question then comes, whether intemperate men are subject to more disease than abstemious men; and, if they are, to what disorders are they subject beyond others and to what extent.

We have much written upon these topics, and are told vaguely that much disease is caused by this indulgence, and that liver diseases, indigestion, consumption, insanity, &c., all grow more, abundantly in

the alcoholized than in the untainted constitutions. Some years ago, when I was in a small country town, and had the whole medical supervision of a definite number of families, temperate and intemperate, I took exact account of the amount of sickness in these classes, measuring each by the number of days of sickness during which they were under my professional care. I found that the excess of the absolute bed sickness of the intemperate was fourteen per cent. over that of the abstemious. This did not include the slighter ailments, the impaired strength, the colds, the headaches, the indigestion, the days and hours in their long periods of broken constitutions when they were unfitted for their ordinary and healthy labor, when their force and available energies were at a discount, but only the marked and prostrating sickness which called for professional interference. Nor did this include considerable sickness and disabilities caused in others by intemperance, as when a stage load of passengers was overset by a drunken driver and several injuries caused, nor the sickness in families caused by the neglect and abuse of the intemperate head or member. Including all these, the excess would go much beyond the fourteen per cent., which was the result of the calculation.

We have less record of this than the importance of the case, the extensive prevalence of the use of alcoholic agents and the pathological state of the alcoholized people, and the effect of all these on private and public prosperity, seem to demand.

The next question is, what is the effect of alcohol on the duration of life?

Mr. F. G. P. Neison, actuary of the Medical, Invalid and General Life Insurance Company of London, investigated the chances of life and death in the abstemious, the temperate and intemperate classes. The latter, the intemperate class, was the principal object of interest, and the results of these observations as to health, disease, mortality and longevity were compared with the same in the general population of England, which, of course, included not only the abstemious and the temperate or moderate drinkers, but also the intemperate.

Mr. Neison, besides the opportunities presented in his office, issued circulars to trustworthy observers and obtained records of many persons of intemperate habits. It was the intention to include in the observations only such persons as were decidedly addicted to drinking habits, and it was not intended to bring within observation mere occasional drinkers, or what is usually termed generous or free livers. In his circular he said, "no case should be entered in the schedule unless the person alluded to was decidedly addicted to drinking habits during a considerable period of life."

The points of inquiry and record are described in the schedule which follows:—

INTEMPERANCE SCHEDULE.

DESCRIPTION.			DEATH.			Disease or Cause of Death.	Duration of Intemperance.	Remarks on the peculiar features of intemperate habits; whether they existed up to the period of death, and any other observations necessary.
Name or other Distinction.	Sex.	Profession or Occupation.	Date of.	Place of.	Age at.			

Mr. Neison's own observations at his office and the facts reported to him were analyzed and classified, and calculations made upon, and deductions drawn from, them. The whole, the statements of facts, the tables, calculations and results were all arranged in an exceedingly valuable and instructive report, which was published first in the *Journal of the London Statistical Society*, and afterwards in Neison's volume of "Contributions to Vital Statistics," from which these facts have been taken.

The following table, on page 204 of the "Contribution," is a condensed abstracts of Mr. Neison's facts, calculations and results.

Ages inclusive.	No. exposed to risk.	Died.	Mortality in 100,000		Proportion of Mortality		At the same rate of mortality as in England & Wales, deaths of intemperance would be
			Intemperate.	England and Wales.	Intemperate.	England and Wales.	
15-19	74.5	1	1,342	730	18	10	.5
20-29	949	47	4,953	974	51	10	9.2
30-39	1861	86	4,520	1,110	42	10	20.7
40-49	1635.5	98	5,992	1,452	41	10	23.7
50-59	966	62	6,418	2,254	29	10	21.8
60-69	500.5	40	7,992	4,259	19	10	21.3
70-79	110	20	18,182	9,097	20	10	10.
80-89	15	3	20,000	19,904	10	10	3.

The following table shows the equation of life, or equal chance of living, in the general population and among the intemperate.

Ages.	EQUATION.		PER CENT.		Average years lost.
	General Population.	Intemperate.	Enjoyed.	Lost.	
20	44.212	15.557	35	65	28.655
30	36.482	13.800	38	62	22.682
40	28.790	11.627	41	59	17.163
50	21.255	10.860	51	49	10.395
60	14.285	8.947	63	37	5.238

The different kinds of drink had different powers or effects in destroying life, or of accelerating its termination. Mr. Neison says:—

"The average duration of life after the commencement of the intemperate habits is—

Among beer drinkers,	21·7 years;
among spirit drinkers,	16·7 years;
among those who drink both spirits } and beer indiscriminately, }	16·1 years;
and consequently the rate of mortality will be,	
among beer drinkers,	4·597 per cent yearly;
“ spirit “	5·946 “ “
“ mixed “	6·194 “ “

The healthy rate of mortality in the general population, including all ages, the most perishable periods of infancy as well as the middle and safer periods, was for

Males - - - - -	2·3 per cent.
Females - - - - -	2·1 per cent.

“The average duration of life after the commencement of intemperate habits among different classes of persons was

Among mechanics, working and laboring men,	18 years.
“ traders, dealers and merchants,	17 “
“ professional men and gentlemen,	15 “
“ females	14 “

In the general population, the mortality of the first of these classes is much greater than that of the second and third.

“The more regular and active physical exercises to which the members of the first two classes are subject, to a great extent accounts for the difference between them and the third class when intemperate. The causes of the deaths were:—

Diseases of the brain and nervous system, including	
delirium tremens - - - - -	97
Diseases of the respiratory organs - - - - -	82
Liver disease and dropsy - - - - -	83
Cholera, diarrhoea and other diseases of the bowels	11
Diseases of the heart, gout, rheumatism - - -	11
“ “ urinary organs - - - - -	6
Fever - - - - -	13
Suicide - - - - -	9
Other diseases - - - - -	45
Total - - - - -	357

Among these were—

Delirium tremens - - - - -	57
Intemperance - - - - -	8
Total - - - - -	65

Of all the deaths of persons 20 years old and upwards, the proportion of those from diseases of the brain was nearly three times as great among the intemperate, and the proportion from dis-

eases of the digestive organs was nearly four times as great as among the general population.

PROPORTION OF THE TOTAL MORTALITY FROM ALL CAUSES.

Causes of Death.	England and Wales.	Intemperate.
Diseases of the brain,	9.710	27.10
Diseases of the digestive organs,	6.240	23.30
Diseases of the respiratory organs,	33.150	22.98
Total three classes,	49.100	73.38

As diseases of the brain and digestive organs produced 50.4 per cent of the mortality of the intemperate, and only 15.93 per cent. in the general population, of course there must have been a smaller proportion from other causes. Hence the mortality from diseases of the respiratory organs was only 23 per cent., while among the people at large it was 33 per cent. of the whole. These include only those who were manifestly intemperate—those who habitually drank beer or spirit—whose nervous systems were frequently under the influence of the stimulus or shaken by the violence of the intoxicating excitement, and who consequently suffered corresponding exhaustion and depression.

All others, those who drink frequently but moderately, suffer less. They have less unnatural disturbance of their balance—less above and less below the average even tenor of healthy life. Nevertheless, they suffer doubtless in a corresponding degree; both in the excess of sickness and in their abbreviation of life.

The effect of alcoholic stimulation is simply and doubtless progressively accumulative. From the first departure from regular nutrition by the due appropriation of the digestive powers, and the just and equal expenditure of the muscular and nervous forces, to the last, which ends in death, there is this gradual and progressive vital exhaustion. Each step, in its due degree, carries the drinker onward and downward, although these steps are so small as to be imperceptible, and the unsuspecting self-indulger makes many steps before he, or even his friends, recognize any departure from fulness of power, or even any progress towards weakness, yet it is none the less certain. The first glass of wine, the first draught of beer, as well as the last, had its due measure of destructive influence and effect. The whole amount of the waste of vital force, although so great and so complete, is but the sum of all the items, every one of which was necessary for, and contributed its due proportion to, the fatal result.

There is a common saying, that it was the last feather that broke the horse's back. This is very true, and has a generic meaning. Yet that last fatal feather weighed no more and was no more necessary to the fatal catastrophe than the first or any of its successors. So the first dram of beer or spirit or of alcohol in any of its forms, and each one that followed it, was, in its due degree, an agent of destruction. It weighed as much, it crushed as much, it performed as great a part in the work of death as the last.

SCURVY IN THE TWENTY-FIFTH ARMY CORPS.

To the Editors of the Boston Medical and Surgical Journal.

It is known to some of your readers that scurvy has prevailed to an unprecedented extent along the Rio Grande river since the 25th Army Corps (colored) have occupied its banks. It commenced its sad work immediately after the troops landed at Brazos Santiago, in the latter part of June, 1865, and intensified until August following, when it began to abate. About nine thousand—one third of the whole command—were seriously affected, and many died. During the voyage, and four to six weeks after, fresh vegetables were rarely seen. On the arrival of fresh vegetables in August the disease rapidly declined, though many were left crippled by its prostrating influence, a part of whom have died and some remain incurable. The white troops in this department were affected by scurvy, though of a milder type, and few died. A few new cases have occurred since August, and it has reappeared in others supposed to be cured. The Medical Director of the 25th Army Corps, E. P. Morong, U. S. Vols., is preparing a detailed account of the malady, which will be of great interest, because of his ample resources for facts connected with it. I have examined the bodies of about fifty who have died at this hospital, and have selected one case from my notes for your JOURNAL, not so much for its special interest, as because it is typical of a large class, which you are at liberty to publish if you think it of sufficient interest to the profession.

CASE No. 27.—*Scurvy*.—Henry Colwell, private, Co. E, 114th U. S. C. T.—This man was attacked with scurvy about the first of July. Gums swelled, bleeding easily. Soon had sores on his legs, arms and sides. July 24th, entered post hospital at Brownsville. Gums spongy, dark livid color; small patches had sloughed. Sores on limbs not healed, discharging some pus. Legs and feet said to feel, when put to the ground, as if it was carpeted with pins, points up. Small appetite; much lassitude; bowels torpid. Patient did not improve much until September, when he appeared to be convalescing rapidly.

Some time in October he "took cold." Cough came on, and some expectoration. Complained somewhat of chest, but most of "misery around the navel."

Nov. 1st.—Patient came under my care. Gums pale and shrivelled; sores healed. There was tenderness over the entire abdomen, particularly in the umbilical region and along the border of the costal cartilages. Slight dulness over the upper lobes of both lungs. Some cough and frothy sputa; some dyspnoea; tongue slightly coated. Pulse weak—110; skin hot. Bowels loose, but no diarrhoea. Urine normal. R. Expectorants, anodynes; some stimulus and nutritious diet, followed by tonics; mustard externally.

Nov. 18th.—Doing well, apparently improving. Continue treatment.

Nov. 21st.—Not so well; "breast hurts me." Flinches on percussion. Tenderness over liver; pulse weak and small; muco-purulent discharge from nose and lungs. Some dyspnoea and irritative cough. R. Pulv. Doveri p. r. n.; stimulus and irritants externally.

23d.—Breathes more easily. Great tenderness over spleen and epigastric region. Mouth moist. Anxious expression.

24th.—Much the same, except almost pulseless during the past twenty-four hours.

25th.—*In articulo mortis* twelve hours. Died.

Sectio cadaveris three hours after death. Face anasarcons, especially the eyelids. Legs completely speckled with black cicatrices; scars of the sores existing in the early stage of the disease; some scars on the sides and arms. These scars are one fourth to one inch in diameter. Considerable adipose, but diminished muscular tissue. Inside of lips and gums, palms of hands and soles of feet, nearly white. Thoracic cavities moist. Upper lobes of both lungs somewhat congested; a dense white deposit around the small bronchial tubes, constituting one third of the parenchyma (where it was found), giving a mottled appearance. Some frothy mucus throughout the lungs, which were otherwise crepitant. *Pericardium* contained six ounces of limpid serum. *Heart* normal, except all the semilunar valves, which were much attenuated; fibrous structure entirely gone. *Liver* yellowish and interspersed, one in every half inch of cubic space, with specks, about the size and color of tomato seeds. It firmly adhered to the diaphragm, between which and the liver was a layer of white, cheesy deposit, about one fourth of an inch thick. *Spleen* about the normal size, but exhibiting an uneven surface, caused by tubercles interspersed through its structure, resembling those in the liver, but larger, some of them red, and some white, and thickest along its lower border. *Pancreas*. On the posterior, lower side the lobules were enlarged, one from half to one inch in diameter, giving a gritty sound on cutting. Structure not much altered in other respects. *Kidneys* flaccid, pale, tough, of uniform color. Pyramids distinct. Interspaces of pyramids quite empty; white tissue in pelvis increased. *Intestines*. Descending colon, sigmoid flexure and rectum small and pale. Diameter of calibre about one inch. The last twelve inches of the ileum, congested and red. The mesenteric glands were enlarged, some of them being one inch in diameter. Similar enlargements existed in the mesocolon.

No other changes of interest were noticed. Head not examined.

IRA PERRY, Assistant Surgeon, 9th U. S. C. T.

Post Hospital, Orange Grove, Brownsville, Texas, Feb. 9th, 1866.

P. S.—This hospital has capacity for 300 patients, but contains only about 200 at present, mostly chronic cases. The weather is

very fine. Roses and oleanders are in blossom. Garden vegetables are scarce, and will not grow without irrigation, but are seen in every stage of growth. One large garden near by, belonging to a Frenchman, contains about ten acres in a good state of cultivation. Cabbages, turnips, beets, radishes, carrots, green peas, &c., can be had any day, in quantities, raised in the open air. The mercury has been at 32° three mornings; and at 30° one morning, the 4th of January. Nine days in this month it has varied from 40° to 83°. I. P.

ERGOT IN PUERPERAL CONVULSIONS.

[Communicated for the Boston Medical and Surgical Journal.]

I NOTICED in the BOSTON MEDICAL AND SURGICAL JOURNAL of Dec. 28th, 1865, an article reported by Dr Collins, as an extract from the records of the Providence Medical Association, with the following prefix, "Puerperal Convulsions—Recovery without Treatment." It seems that the patient, at 8 o'clock, was seized with convulsions; that instrumental delivery was adopted; that profuse hæmorrhage accompanied the removal of the placenta, and that several doses of ergot were given in reference to the hæmorrhage. She had no more convulsions. Full consciousness returned at 4 o'clock, A. M. She made an excellent recovery. I have referred to this case for the following reasons:—Dr. Collins has reported it as a case of Puerperal Convulsions recovering without treatment. In my opinion this patient *received treatment*, and that the most skilful. Ergot was prescribed for the hæmorrhage. It was equally appropriate for the condition giving rise to the convulsions. Dr. C. had in view simply the former; unconsciously, he most successfully addressed the latter. We may thus see how important it is in all cases of recovery from very dangerous attacks of illness, to review the treatment, as sometimes novel valuable inferences and principles are evolved.

Fifty years ago ergot was used by Dr. Wm. Perry, of Exeter, N. H., an eminent practitioner, in cases of puerperal convulsions, and has been prescribed by him in a very extensive practice, with abundant success, up to the present time. It is his main reliance and dependence in these attacks. Ergot has also been, and is now, a favorite remedy of his in hysterical spasms and convulsions, and kindred troubles. A report was introduced by him, he informs me, upon these points, in Thacher's American Modern Practice, in 1820. Dr. Perry had charge of the proof sheets, by Dr. Thacher's request. My own practice corroborates the confidence of Dr. Perry in ergot. I have always prescribed it in cases of puerperal convulsions for the last twenty-six years with equal success. The idea of its use originated with Dr. Perry as a derivative to the uterus from the head. The opinions of Brown-Séquard as to the action of ergot upon the system,

serve to enhance our estimation of it in convulsions. Séquard announces that ergot acts directly as a sedative, allaying congestion of the cerebro-spinal axis. This it undoubtedly does. The successful exhibition of ergot in cerebro-spinal meningitis, after active catharsis, is strikingly in point.

Now when we take into consideration the derivative effects of ergot to the uterus, and its power of lessening cerebro-spinal congestion, we cannot but perceive its peculiar fitness as *the* remedy for puerperal convulsions. It may, in some cases, fail; particularly where the cerebral substance is irreparably damaged early in convulsions. Here all treatment would prove unavailing. I do not hesitate to say, however, that when used judiciously, and in time, its prompt and singular efficiency will satisfy all who may make trial of it, that a want, long felt by the profession, has been supplied.

We are aware of the high regard entertained by some for the German or acid treatment, as eliminating poisonous elements from the blood, by the kidneys and alimentary canal, in puerperal convulsions; also of the great reliance placed upon venesection by other medical men. We believe that these means may all be well under certain circumstances; nevertheless, we feel that ergot fills a place and meets conditions which neither of the other methods can. To say the least, in many, or most cases, the use of acids, tartaric or others, is a measure too late for much good in present convulsions, although, perhaps, appropriate as a caveat or preparatory treatment to parturition in kidney disabilities. Venesection, when used also as a wholesale measure, as the chief reliance, is often inadmissible on account of anæmia, or constitutional delicacy, and is, by no means, so well indicated, either in puerperal convulsions or apoplexy, in these days of lowered vitality as in former years, when antiphlogistic remedies were imperatively demanded.

THEO. H. JEWETT.

South Berwick, Me.

ARMY ITCH.

To the Editors of the Boston Medical and Surgical Journal.

THE opinion so confidently expressed in your issue of March 1, that the "army itch," so called, "is simply scabies, that it is always caused by the ordinary itch insect, and that it readily yields to proper external treatment," leads me to make an inquiry or two for the purpose of ascertaining the ground on which your opinion is founded. If the disease in question be "simply scabies," why is it that the eruption is never, in its first stages, found in the groins, or between the fingers, or in the flexures of the joints? Why is it that the eruption is not "distinctly vesicular" from the beginning? Why is it that the "peculiar itch animalculæ" have never been found in

any case? Why is it that "the universally admitted remedy for scabies" will not cure it?

You express the opinion that it "is always caused by the ordinary itch insect." Have you found that "insect" in any of the cases you have examined? If so, I have no doubt you have found "scabies," and that it will "readily yield" to the sulphur treatment. If not, I question seriously whether the cases you have examined are the "army itch" at all. Both these diseases have prevailed in this vicinity during the last two years, and they are easily distinguishable the one from the other, but the treatment which will cure the one in a week will have no effect whatever upon the other, save to aggravate it. The cases of scabies are "readily" cured, whilst the "army itch" is altogether a more troublesome customer. Such has been my experience, and such has also been the experience of other practitioners in this vicinity. Hence the queries I have proposed above, by throwing light upon which you will no doubt greatly oblige more of your constant readers than the undersigned.

Essex, Vt., March, 1866.

L. C. BUTLER.

[In replying to the above communication, we shall confine ourselves simply to the inquiries it contains, as it is not our intention to discuss the general subject of scabies at length. The opinion we "so confidently expressed" was based, as was then stated, upon the results of the careful examination of a great many cases in returned soldiers and their families, and upon previous study of the disease.

In answer to the first question, we would state that the position of the efflorescence, so far as we have seen it, does not differ from that of scabies generally. We have found it about the wrist and between the fingers as often as it ever occurs there in adults whose hands are much exposed to cold and remain uncovered, as is the case with soldiers. As to "the groin and flexures of the joints," we should say that it was a rare exception for the eruption of scabies ever to appear in such situations in the first or any other stage, unless the affection were general, when it might affect those as well as all other parts of the body.

Again, as to the character of the eruption, we have seen nothing peculiar about it. It has been, according to our observation, as distinctly "vesicular from the beginning" as scabies ever is, which is very seldom. We do not mean to say that vesicles do not occur in this disease, but that they are no more the characteristic efflorescence than the erythema, papules, pustules and other eczematous appearances which usually accompany it. The only distinctive and positive sign of scabies is the burrow, and this we have observed in a great majority of the cases of army itch we have examined; certainly in as large a proportion as in other adults afflicted with scabies before the war. Having stated this, it may be unnecessary to add in reply to the inquiry, that "the peculiar itch animalcule" has been

found, for where a burrow is, there is a female and her eggs or their remains. We have repeatedly removed it and found it to be, as before stated, the *sarcoptes hominis*. In a case of long standing it is often impossible to discover an undisturbed burrow, but the proportion of such cases among soldiers was no larger than occurs among soldiers in foreign armies or other adults under similar conditions.

It seems, however, that our correspondent makes the success in searching for an insect the test of the character of the disease, for, if we understand his language, he says, if we have found it we have been examining only a case of scabies. It follows, therefore, that the diagnosis must depend largely upon personal skill and experience, for we have known many cases where the burrows have been passed by unnoticed by one physician and have been subsequently detected by another. The former may have regarded the case as army itch, the latter knew it to be scabies, or that they are identical.

With regard to treatment, if by "the usually admitted remedy for scabies" is meant sulphur in some form, we reply that it never fails to cure it, if properly used. That is, it does for army itch what it does for scabies—it eradicates the parasitic element. There remains to be treated the secondary eruption after its exciting cause has been removed. This cannot be cured by sulphur, is often aggravated by it, if employed longer than to perform its office of a parasiticide. It is these secondary phenomena which, presenting some peculiarities not observed in general practice owing to the habits of camp life, have somewhat modified the ordinary appearances and have led some physicians to consider these cases distinct from scabies. We have never failed to cure this form, as well as all others, by a few applications of Vlemineckx's solution of sulphide of lime. The eruption then generally disappears of itself, but sometimes requires the treatment applicable to the non-parasitic forms of eczema.—Eds.]

PETTENKOFER'S THEORY OF THE MODE OF PROPAGATION OF CHOLERA.

DR. HERMANN WEBER read before the Epidemiological Society, Dec. 4, 1865, a paper based on Prof. Pettenkofer's last publication on the subject, "*Ueber die Verbreitungsart der Cholera*" (*Zeitschrift für Biologie*; Jahrgang, 1865, p. 323).

With regard to the question of contagiousness, Pettenkofer believes that the disease is propagated by human intercourse, and never without this; not by simple contact with the diseased or their excretions, according to the old theory of contagion, but by means of certain local accessory causes contained in the soil. Temperature, wind, moisture, or dryness of the atmosphere, and elevation of ground, are all not essential for the epidemic occurrence of cholera, although they may, under certain circumstances, exercise great influ-

ence on its course. The only indispensable conditions are, *human intercourse yielding the germ in the excretions of cholera patients, and the soil developing this germ into activity.*

The qualities of the soil considered as necessary for the development of the cholera-germ are—1. That it be porous—*i. e.*, permeable to air and water; 2. That water exist in a certain depth below the surface (ground-water or subsoil-water); and 3. That the soil be to some degree impregnated with the products of organic decomposition, especially those of excrementitious origin.

Respecting the first condition, Pettenkofer, and the members of the Bavarian Commission for the Investigation of Cholera in 1854, have found, without a single exception, that the soil in the towns and villages epidemically affected with cholera was porous; while localities built on impermeable rock were either entirely spared, or, at all events, exhibited only isolated cases. Several apparent exceptions were, on closer examination, found to confirm the law. The well-known researches of Boubée and Fourcault are in accordance with this law.

With regard to the presence of ground-water or subsoil water (landspring—"Grundwasser"—the first stratum of water reached at a certain depth below the surface, between about five and fifty feet), Pettenkofer points to the fact, generally acknowledged, that the cholera spreads with predilection along the course of rivers and in hollow situations; but he regards the water of the soil underneath the habitations as much more important than that of the more or less distant river; and maintains that, as a rule, those localities suffer more from cholera which lie nearer to the level of the ground-water, the distance of which from the surface may be regarded as depending on the first impermeable stratum of the soil. The fall of the impermeable stratum may be parallel to that of the surface, but is more usually not; if the former be greater than the latter, then elevation means greater distance from the ground-water, and probably greater immunity from cholera, but not otherwise. The level of the ground-water in the same locality may vary considerably in the same year and in different years; and on this fluctuation in the varying degree of susceptibility of the locality for the cholera epidemics seems to depend. Under equal circumstances, the rise of the ground-water will cause a greater susceptibility by moistening a higher stratum of the porous soil, which is generally more impregnated with organic matters the nearer it is to the surface. It is the period of the receding of the ground-water from its greatest elevation which is most dangerous. As this occurs usually in July, August, and September, cholera usually makes its greatest ravages at that period; but the unfavorable condition of the soil, may, through unusual circumstances, occur in winter instead of in summer; and cholera epidemics may, as experience shows, occur in the midst of a Russian winter.

With regard to the cholera-germ itself, Pettenkofer assumes it to

be contained in the intestinal excreta of cholera patients, but believes that it cannot produce cholera by itself, but must first undergo some change under the influence of the susceptible soil, and thus become developed. This interchange between the cholera-germ contained in the excreta and the soil may, he suggests, either take place in the soil, and the developed germ may thence be inhaled or otherwise introduced into the body, or it may take place within the human body itself, the product being the active germ.

Pettenkofer adds hygienic suggestions for the prevention of epidemics, based on his views.

Dr. Weber remarked that these views, though not yet altogether proved, were in accordance with the best ascertained facts, and deserved to be tested without loss of time. He added that the observations of position and fluctuations of ground water might lead to other important discoveries, and alluded to the researches of Prof. Buhl, of Munich, according to which the death-rate from typhoid fever, in Munich, was in intimate relation to the varying elevation of the ground-water in that town.—*Med. News*, from *Brit. Med. Jour.*

Bibliographical Notices.

The Malformations, Diseases and Injuries of the Fingers and Toes, and their Surgical Treatment. By THOMAS ANNANDALE, F.R.C.S. Edin., Lecturer on Surgery, Assistant Surgeon to the Edinburgh Royal Infirmary. Philadelphia: J. B. Lippincott & Co. 1866.

To the essay which forms the principal portion of this work the Jacksonian prize was awarded last year by the Council of the Royal College of Surgeons of England. The author in presenting it to the public in its present form has added two new chapters and other matter, so that the contents are arranged as follows:—1. The Congenital Affections. 2. The Inflammatory Affections. 3. The Tumors. 4. The Injuries. 5. The Non-congenital Contractions and Dislocations. 6. The Resections and Amputations of the Digits.

Under these heads nearly all the diseases and abnormal conditions of these important members are considered, although many of them do not receive the notice which their importance demands, or which is given them in the best general works on surgery. In a monograph which is intended to be exhaustive, it is strange that none of the parasitic diseases of the nails are alluded to, although more trivial and rare affections of these appendages are spoken of.

The book is illustrated by many detailed cases, and by a series of lithographic plates, which forms one of its most valuable features. It will be serviceable as a book of reference in the surgeon's library, but will give him little information which may not be procured elsewhere. The book is published in a beautiful form, but although bearing the name of an American house was printed in Edinburgh.

 THE BOSTON MEDICAL AND SURGICAL JOURNAL.

 BOSTON: THURSDAY, MARCH 22, 1866.

ANNUAL REPORT OF THE SURGEON-GENERAL OF THE U. S. ARMY.

THIS report is the briefest possible statement of the finances and general business of the Medical Department of the Army, but it contains statistics of the greatest interest and of much importance for permanent record. These exhibit in a very striking manner the vast proportions of the terrible war through which the nation has passed, and will stand as a lasting evidence of the fulness of the provision made by the Government for the physical wants of the men who sacrificed so much on the altar of their country. The document, as we have said, is a business paper of the most condensed character, and it is difficult to transcribe portions of it without copying the whole. To select a few of the items:—

We find that the whole sum expended by the department during the year ending June 30th, 1865, was nineteen millions, three hundred and twenty-eight thousand, four hundred and ninety-nine dollars and twenty-three cents (\$19,328,499.23). Among the items included within this expenditure we note a large disbursement for thirteen hundred and eighty-eight (1388) artificial legs, and eleven hundred and twenty-one (1121) artificial arms.

The maximum of hospital provision was attained during the year, and this we find to have reached the enormous proportions of "two hundred and four General Hospitals, with a capacity of (136,894) one hundred and thirty-six thousand eight hundred and ninety-four beds." Of this number one hundred and seventy have been since discontinued, by order from the War Department. The most ample provision was also made for the wants of the armies in the field, and General Sherman's army was met at Savannah by four first class sea-going steamers, thoroughly equipped as hospital transports, with extra stores and supplies for five thousand beds, should it have been found necessary to establish large hospitals upon his line of operations.

The whole number of medical officers of all grades in the army since April, 1861, is twelve thousand one hundred and forty-five (12,145). Of this number (547) five hundred and forty-seven were Surgeons and Assistant Surgeons of Volunteers. Mustered into service (2109) two thousand one hundred and nine Volunteer Regimental Surgeons, and (3882) three thousand eight hundred and eighty-two Volunteer Regimental Assistant Surgeons; employed as Acting Staff Surgeons (75) seventy-five, as Acting Assistant Surgeons (5532) five thousand five hundred and thirty-two. As far as returns have been received, during the war (34) thirty-four officers of the Medical Staff have been killed, or died of wounds received in action, (24) twenty-four wounded, and (188) one hundred and eighty-eight have died from disease or accident incurred in the service; (1) one died in a rebel prison, (6) six of yellow fever. A completed record will increase this number.

The returns of sick and wounded, while they exhibit a sad picture of the vast amount of suffering which the war has brought upon our

people, impress one very forcibly with the immense proportions of the army and the extent of its military operations. These returns show "that of white troops (1,057,423) one million fifty seven thousand four hundred and twenty-three cases have been treated in General Hospitals alone, from 1861 to July 1, 1865, of which the mortality rate was 8 per cent. In addition to the alphabetical registers of dead, not yet fully completed, the records contain (30,000) thirty thousand special reports of the more important forms of surgical injuries, of disease, and of operations. These reports, with statistical data, and a pathological collection numbering (7630) seven thousand six hundred and thirty specimens, furnish a mass of valuable information, which is being rapidly arranged and tabulated as a Medical and Surgical History of the War.

The Surgeon-General refers with emphasis to the absolute protection from the importation of contagious or infectious diseases, afforded by the strict quarantine which was enforced at all the Southern seaports and cities held by our troops, and urges it as a most significant fact, in view of the apprehensions felt with regard to the Asiatic cholera. The report concludes with a brief tribute to the ability, courage and zeal displayed throughout the war by the officers of the Medical Department, whose motive impulse he believes to have been almost without exception the purest patriotism and professional honor. We regret the extreme brevity of the document, but the simple facts which it contains are suggestive of volumes.

Death of Dr. Abraham Gould.—At a meeting of the physicians of Lynn, held at the office of Dr. Daniel Perley, on Wednesday afternoon, to take action in regard to the decease of Dr. Abraham Gould, the following resolutions were adopted:—

Whereas, God in his providence has removed from our midst Abraham Gould, M.D., the senior physician of this city—

Resolved, That by this afflictive event the profession is bereft of one about whom its love and pride especially centred, and the community of a safe adviser, and an esteemed and useful citizen.

Resolved, That for his rare professional attainments, and skill in practice, his unwearied devotion to the interests of his patients, the uniform courtesy which marked his intercourse with his associates, his simplicity and kindness of heart, and the ripeness of his many virtues, his memory shall be long cherished by us with the sincerest respect and esteem.

Resolved, That we respectfully tender to his widow and children our heartfelt sympathy in their affliction, and that, as a token of our respect, we will attend the funeral services in a body, wearing the customary badge of mourning.

Resolved, That these resolutions be communicated to the family of the deceased, and to the *Lynn Reporter* and *Boston Medical and Surgical Journal* for publication.

Dr. Gould stood deservedly at the head of the profession in this city, from his age and skill. He was settled in Lynn for more than thirty years, having taken the house and practice of Dr. Gardner upon his decease. His practice soon became very extensive, embracing not only a large clientele in this city, but also numerous families

in the adjacent towns. For years he never refused a call, riding night and day wherever his services were sought; and was ever ready even during his last sickness to advise those who sought his counsel. This devotion made him the "beloved physician" in many homes.

He was frank and cordial in all his relations with his associates, responding cheerfully to all requests for consultation. He detested all forms of quackery, and ridiculed them unsparingly. With strong faith in the powers of nature, he had little confidence in heroic treatment, and trusted in the self-limitation of most diseases. A joke often served him in place of a pill.

He read much and thought more; and was decided and out-spoken in all his opinions. He was *un bon vivant et bon raconteur*; loved a good horse or dog; was a splendid shot; would ride miles to see a rare vine or good fruit; and in the infrequent moments of freedom from professional cares was the life of the social circle. Such characteristics could not fail to win him hosts of friends.

His popularity was well deserved, and his death leaves a place in the profession which can with difficulty be filled.

B. B. B.

Plan for Quarantine for Cholera.—We have received a plan for Quarantine for Cholera, originally addressed to the *Quebec Morning Chronicle*, by W. Marsden, M.D. It is based on the writer's study of the disease during five distinct epidemics, within the last thirty-four years. The basis of the plan is "absolute non-intercourse, for a short period, with persons from abroad suspected of being infected; and a thorough disinfection of personal effects." The paper contains a ground-plan of a quarantine station, with a minute description, together with a strict code of rules for its management. The limit of detention for healthy persons, arriving in infected vessels, is ten days; and they are to be kept quite isolated from the sick.

A new "Inhaler" for Sulphuric Ether.—We have received a description of this instrument from its inventor, F. D. Lente, M.D., of Cold Spring, N. Y., and we are glad to learn, in this way, that our New York brethren are at last turning their attention towards sulphuric ether as a preferable anæsthetic to chloroform. In this instrument the ether is applied on a cone of flannel fitted upon a frame of light wire, and so adjusted as to be kept supplied with ether as occasion may require, without the necessity of removing it from the patient's face during the inhalation. Tieman & Co., of New York, are the manufacturers of the instrument.

American Medical Association.—To Competitors for the Prizes, 1866.—I. All communications with motto attached, and name with motto in sealed envelope, must be sent to the chairman of the committee, Dr. Austin Flint, 257 4th Avenue, New York City, on or before April 15, 1866. II. If the authorship of an essay is declared to any member of the committee, said essay shall not be considered in competition for the prizes.

AN association has been formed by the dentists of Worcester and its vicinity, in this State, called the Massachusetts Central Dental As-

sociation, and a constitution and by-laws adopted. The officers for the current year are:—*President*, S. P. Miller, Worcester; *1st Vice President*, A. A. Cook, Milford; *2d Vice President*, W. N. Snow, Worcester; *Corresponding Secretary*, O. C. White, Hopkinton; *Recording Secretary*, J. N. Tourtelette, Worcester; *Treasurer*, O. F. Harris, Worcester; *Executive Committee*, H. F. Bishop, Worcester, John McGregory, Southbridge, C. W. Estabrook, Worcester.

WE learn that Dr. Clarkson T. Collins, of Great Barrington, Berkshire Co., Mass., has relinquished his Institute, for a time at least, and is about to make a trip to Fort Benton, in Montana Territory, at the head waters of the Missouri River. E. H. Durfee, Esq., of Leavenworth, Kansas, has invited some fifty gentlemen and several ladies to make the trip with him. They leave Leavenworth on the 15th of this month, and expect to be absent between two and three months.

Presentation.—At the close of the exercises at the Mass. Medical College on Wednesday, March 7th, the graduating class waited upon their popular janitor, Mr. Wm. B. Andrews, and after a few pleasant remarks presented him with a purse of \$50, as a slight token of their esteem.

FROM the Annual Report of the Adjutant-General of Massachusetts we learn that the number of men of all arms furnished to the military and naval service during the war by the State was 159,165. Nearly every town and city is credited with a surplus over all calls. The total amount of bounties paid under the act of Nov. 18, 1863, is \$11,684,957.60. Of 5443 commissioned officers in our regiments and batteries, 265 were killed in battle, 106 died of wounds, 76 died of disease, 3 died in rebel prisons, 3 deserted, 8 were cashiered, and 101 dismissed. Of 106,330 enlisted men, 3278 were killed, 1822 died of wounds, 5596 died of disease, 1840 died in rebel prisons, 8221 deserted, 11,731 were discharged for disability, and 1026 are still only accounted for as missing.

At the Fifth Annual Commencement of the Bellevue Hospital Medical College, New York, on the 24th ult., the degree of M.D. was conferred on 171 graduates.

The Pennsylvania College of Dental Surgery held its Third Annual Commencement on the 1st inst. There were 16 graduates.

The Fourteenth Annual Commencement of the New York Ophthalmic School and Hospital was held on the 23d ult., and diplomas were presented to 11 candidates.

The Chicago Medical College Commencement took place on the 1st inst. The degree of M.D. was conferred by the President on the graduating class, which numbered twenty-two.

Augustus Mason, M.D., has recently been appointed Coroner of the County of Middlesex.

The Metropolitan Board of Health.—The following are its members: Police Commissioners Thomas Acton, James G. Bergen, Joseph S. Bosworth and Benj. F. Manierre, Treasurer; and Drs. J. O. Stone,

W. Parker, and James Crano of Brooklyn; and Dr. John Swinburne, Health Officers. Jackson A. Shultz, Esq., who is also a member, is the President of the Board. Col. E. Clark has been appointed Secretary of the Board; Dr. E. B. Dalton, Sanitary Superintendent; Dr. E. Harris, Registrar of Records; and Col. George Bliss, Jr., Attorney. The officers' salaries have been fixed as follows:—General Superintendent, \$4,000; Assistant Superintendent for Brooklyn, \$2,500; Secretary, \$2,000; Registrar, \$2,500; Sanitary Inspectors, \$1,200.—*New York Medical Record.*

Foreign Intelligence.—M. De Wouves has demonstrated that albumen is present in the urine of all cholera patients some days before the more serious symptoms exhibit themselves. He does not attribute this fact to any disease of the kidneys, but he regards it as an important means of distinguishing between true cholera and diarrhœa.

The cattle disease is still increasing in England, and is spreading in all parts of Scotland. Since vaccination has been recommended as a protection against it, mixtures of croton oil or tartar emetic and colloid have been sold for vaccine matter to supply the great demand. The question whether the disease is a form of smallpox or not, or whether it may be prevented by vaccination, has not yet been decided. Some interesting microscopic objects have been observed in large quantities in the muscular tissue of affected cattle, which resemble in many respects the encysted forms of entozoa, but as they have been long known to occur in the muscles of other and healthy animals, their connection with the cause of the cattle plague is very improbable. In France the disease was checked by the immediate slaughter of the affected cattle in the district where it appeared, but it was again imported by means of two gazelles from London, and was conveyed to the Jardin des Plantes, where other orders of animals, as the peccary and wild boar, were attacked.

The announcement that a baronetcy had been conferred upon Prof. Simpson gave intense delight to his students. When Sir James made his appearance in his class room yesterday, the students, taking leave to dispense with academical propriety on the auspicious occasion, rose from their seats *en masse*, and cheered vociferously. When the applause had subsided, Sir James briefly acknowledged the demonstration. He said that he could not affect to misunderstand what their congratulations meant; of all congratulations of this kind those of his class were perhaps the most pleasant of any. The honor conferred had come upon him as a complete surprise. He felt almost ashamed that he should have been the individual selected by Her Majesty to receive an honor intended for the whole medical profession; and perhaps that honor ought to be considered by him as all the greater, seeing that it was the first time a baronetcy had ever been given to a Scotch professor, or a practiser of the healing art in Scotland. As it had been given among other things for the advancement in surgery, he would now proceed at once to the surgical subject which was to form the topic of to-day.—*Edinburgh Daily Review*, Jan. 9th.

[We have no disposition to cavil at the distinction thus conferred upon Prof. Simpson; without doubt he is worthy of all the honor bestowed. Most of the notices of this mark of royal favor, however,

as we read them in the English medical journals, mention as the special occasion of the demonstration his boon to humanity of chloroform, by which the pain of surgical operations is annihilated. As if the introduction of the use of chloroform were identical with the discovery of anæsthetics! This is about as sensible as it would have been to bestow honors upon the inventor of some new, *supposed* improvement in vaccination, while the immortal Jenner was left in the shade. The wilful ignorance or the obstinate, stupid prejudice of some of these journalists almost surpasses belief. Thus the *Medical Times and Gazette* says that no "physician since Jenner has conferred so great a boon on mankind as has the discoverer of chloroform," and speaks of operations, such as ovariectomy, which without it "would never have become legitimate surgical proceedings"; and in another place speaks of him as "having discovered the anæsthetic which European experience has shown to be the best"! And all this because it happens to be the most *convenient* anæsthetic, not for the patient, but the operator; and while, during the very month that this Journal talks in this absurd fashion, it records no less than three deaths from the use of chloroform—two by inhalation, and one by its introduction into the stomach. It is fortunate that Sir James Y. Simpson has a sounder basis for surgical fame than that founded on his anæsthetic.—Eds.]

Out of forty-eight candidates, the Paris Imperial Society of Surgery has chosen the following ten foreign correspondents:—Donders, of Utrecht; Longmore, of Netley Hospital; Bilroth, of Zurich; Brown-Sequard, of Boston; Holmes, of London; Humphry, of Cambridge; Gurlt, of Berlin; Neudorfer, of Prague; Smith [probably Stephen Smith], of New York; and Emmert, of Bern.

VITAL STATISTICS OF BOSTON.
FOR THE WEEK ENDING SATURDAY, MARCH 17th, 1866.
DEATHS.

	Males.	Females.	Total.
Deaths during the week	41	44	85
Ave. mortality of corresponding weeks for ten years, 1856—1866	38.2	35.7	73.9
Average corrected to increased population	00	00	80.49
Death of persons above 90		0	0

PUBLICATIONS RECEIVED.—The Medical Record, No. 2.—New York Medical Journal for March.—Atlanta Medical and Surgical Journal, Vol. vii., No. 1.—Medical Reporter, St. Louis, No. 1.—Chicago Medical Examiner for March.—Buffalo Medical and Surgical Journal for February.—Cincinnati Lancet and Observer for March.—Richmond Medical Journal for March.—Medical and Surgical Reporter, Nos. 1-10.—Pacific Medical and Surgical Journal for February.—Dental Register for February.—Dental Cosmos for March.—American Journal of Pharmacy for March.—Journal of Materia Medica for March.—Chemist and Druggist for February.—L'Union Médicale, Nos. 21-26.—New York Lancet, Nos. 1, 2, 3.—An Essay on the Life in Nature, and an Extract from an unpublished Essay on Physical Force. By Louis Mackall, M.D., Washington, D. C.—Proceedings of the Boston Society of Natural History, Vol. x., Nos. 7, 8, 9.

DEATHS IN BOSTON for the week ending Saturday noon, March 17th, 85. Males, 41—Females, 44. Accident, 2—apoplexy, 1—inflammation of the bowels, 2—congestion of the brain, 2—disease of the brain, 3—inflammation of the brain, 1—bronchitis, 6—cancer, 1—consumption, 17—convulsions, 2—croup, 3—diphtheria, 1—dropsy of the brain, 4—epilepsy, 1—bilious fever, 1—scarlet fever, 1—typhoid fever, 2—disease of the heart, 1—homicide, 1—infantile disease, 5—congestion of the lungs, 1—inflammation of the lungs, 8—measles, 2—neuralgia, 1—old age, 3—paralysis, 2—peritonitis, 1—premature birth, 1—smallpox, 1—disease of the spine, 2—unknown, 6.

Under 5 years of age, 36—between 5 and 20 years, 8—between 20 and 40 years, 14—between 40 and 60 years, 13—above 60 years, 14. Born in the United States, 60—Ireland, 17—other places, 8.